

U.S. Serial No. 10/533,766
Docket No. 26281-09A

Examiner: Constance B. Salters
Art Unit: 3609

REMARKS

Claims 7-8, 10-13, 16 and 18-23 are pending in the present application. Claims 7, 13 and 16 have been amended, claims 1-6, 9, 14-15 and 17 have been canceled and new claims 22 and 23 have been added.

Applicant notes with appreciation the indication by the Examiner that claims 9, 15 and 17 are objected to as being dependent upon rejected base claims but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

The method and device set forth in new claims 22 and 23 respectively includes a protrusion arranged on the surface of the support base for bending a formation place of the break-scheduled line of the skin with its back surface convexed. Therefore, a tension occurs at the formation place by mounting the skin on the substrate, and the break-scheduled line will open easily after forming the break-scheduled line. As a result, a bottom of the break-scheduled line can easily be seen from the outside and the depth of the break-scheduled line or the thickness of the remaining portion can be easily measured with the measuring means. Nevertheless, the break-scheduled line is narrow. In addition, the skin will be cut easily when the cutting blade contacts the skin, because tension of the skin occurs.

Drawings/Specification

Figure 1 is objected to because the reference characters (10) and (18) have both been used to designate an "air bag door" and because reference character (13) is not discussed in the specification.

In addition, the disclosure is objected to because reference character (23) of Fig. 1(b) and Fig. 17 is specified as a "suction hole" and it is asserted that the figures do not depict the same article

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In response, Applicant is submitting corrected drawing sheets concurrently herewith and has also amended the specification to correct the noted deficiencies. Applicant respectfully submits that these changes to the specification and the drawings address the concerns noted by the Examiner and reconsideration and withdrawal of the objection to the drawings is respectfully requested.

Rejections Under 35 U.S.C. §102

Claims 1 and 2 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 7,011,512 to Evans and claims 1-6 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,744,776 to Bauer.

In response Applicants have canceled claims 1-6. Therefore, the rejection of claims 1-2 as being anticipated by Evans or of claims 1-6 as being anticipated by Bauer is believed to be moot.

Claims 7, 8 and 10-12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by or obvious in view of Bauer.

In response, Applicants have amended claim 7 to include the subject matter of claim 9, which was indicated by the Examiner to be allowable over the prior art of record. Therefore, claim 7 as well as claims 8 and 10-12 which depend from amended claim 7, are believed to be allowable over the prior art of record and notice to that effect is earnestly solicited.

Claim 16 stands rejected under 35 U.S.C. §102(b) as being anticipated by Bauer. In response, Applicants have amended claim 16 to include the subject matter of claim 17, which was indicated by the Examiner to be allowable over the prior art of record. Therefore, claim 16 is believed to be allowable over the prior art of record and notice to that effect is earnestly solicited.

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Claim 21 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Evans. Claim 21 depends from claim 16, which as discussed above, has been amended to include the subject matter of claim 17. Thus claim 21 is also believed to be allowable over the prior art of record and notice to that effect is earnestly solicited.

Rejections Under 35 U.S.C. §103

Claims 13 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bauer in view of Evans.

In response, claim 13 has been amended to incorporate the subject matter of claim 14 and of claim 15, which was indicated by the Examiner to be allowable over the prior art of record. Therefore, claim 13 is believed to be allowable over the prior art of record and notice to that effect is earnestly solicited.

Claims 18-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Evans in view of Bauer.

Claims 18-20 depend from claim 16, which has been amended to include the subject matter of claim 17. Thus claims 18-20 are also believed to be allowable over the prior art of record and notice to that effect is earnestly solicited.

Applicant notes that the depth or thickness of the break-scheduled line affects the performance of air-bag opening and the safety of drivers. Therefore, a highly accurate method of controlling the depth or thickness is required.

The present invention is directed to a device and a method which can form a break-scheduled line with a cutting blade, not a laser cutter, a high frequency cutter or an ultrasonic cutter because it is preferred that a width of the break-scheduled line is narrow for securing an invisibility of the break-scheduled line formed on a back surface of the skin.

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In contrast, Bauer describes an apparatus for an air bag deployment opening including an ultrasonic sensor 46 to which a cover is fixed thereon, a central computer control 38 and a laser generator 34. The apparatus can precisely control the thickness of material remaining after a groove scoring (the break-scheduled line) is produced by a laser beam 14B, by providing a feedback signal from the ultrasonic sensor 46 to the central computer control 38 (see col. 6, line 53 – col. 7, line 8, and Fig.4)

In addition, Evans describes a laser ridge skin distortion reduction apparatus including laser 62 and a plate 46 with laser ridge or boss 52. The apparatus can form a score line 66 by laser beam 64 in the condition that skin 54 is raised where it contacts ridge 52 (See Figs. 6-9).

Thus it is respectfully submitted that Bauer and Evans cannot keep the invisibility for a long time as in the present invention. Bauer and Evans are directed to devices which can form a break-scheduled line by a laser beam and, as described in the present application, a width of a break-scheduled line formed by a laser beam becomes wide. So, the formation place where the break-scheduled line was formed will be rendered open in the condition that skin was flattened. Therefore, the invisibility of the skin deteriorates with time.

Furthermore, a bottom of the break-scheduled line which is formed by a laser beam can be seen in the condition that skin is flattened, because the width of the break-scheduled line is wide. Therefore, it is not necessary to bend the skin for opening the incision of the break-scheduled line, when the depth of the break-scheduled line or the thickness of the remaining portion is measured with the incision of the break-scheduled line. (This is clearly shown in Figs. 4 and 5 of Bauer and in Figs. 3 and 9 of Evans).

Applicant also respectfully submits that the present invention does not cover a device and a method wherein the break-scheduled line is formed by a laser beam, but is

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only directed to a device and a method wherein the break-scheduled line is formed with the cutting blade. Therefore, if the device of Bauer is used, it is not necessary to use the ridge of the plate of Evans for measuring the depth or the thickness with an ultrasonic sensor.

In addition, Applicant respectfully submits that Bauer describes the problem of the break-scheduled line with narrow width (see col. 2, line 66 – col. 3, line 3) and thus teaches away from the use of a cutting blade as in the present invention.

Furthermore, the purpose of the ridge in the plate described in Evans is different from the protrusion of the present invention. Namely, the purpose of the ridge of the plate of Evans is to reduce skin distortions and to keep an invisibility of the score line (see col. 1, line 62 – col. 2, line 7), not to measure the depth or the thickness easily as in the present invention. In addition, Evans does not describe or suggest measuring the depth or the thickness at all, and there is no indication of using the ridge for making the measuring easy.

The Examiner has also indicated that the ridge of the plate of Evans can be used for the device of Bauer. Applicant respectfully disagrees. Bauer describes an ultrasonic sensor which generates signals corresponding to the thickness of material remaining after the groove scoring with the cover fixed thereon. On the other hand, Evans discloses that the height of the ridge will typically be from about 0.05 mm to 1.5 mm, and it is believed that the width of the ridge would be same size (see Figs. 5-8).

Applicant respectfully submits that it is difficult to measure the thickness with the ridge on the surface of the ultrasonic sensor. There are mainly two types of ultrasonic sensors, pass through type which a transmitter and a receiver are set on the opposite side, and reflect type which they are set on the same side. Bauer uses the reflect type of ultrasonic sensor (clearly shown in Fig. 4 and Fig. 4A, but Applicant is unable to determine how the thickness is measured in Bauer without a reflect portion in the skin.). If

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the ultrasonic sensor of Bauer has the ridge having the height and the width of above size thereon, the measuring the thickness with the ultrasonic sensor is interrupted with the ridge.

As discussed above, the depth and the thickness are important for the performance of air-bag opening and the safety of drivers. Therefore, Applicant does not believe that the ridge of the plate can be used for the device of Bauer.

For all of these reasons, Applicant respectfully submits that the present invention can be distinguished from the prior art of record and further that the combination of Evans and Bauer does not anticipate or render obvious the claimed invention.

New claims 22 and 23 are also believed to distinguish over the prior art of record for the reasons provided above.

CONCLUSION

Applicant believes that the foregoing is a full and complete response to the Office Action of record. Accordingly, an early and favorable reconsideration of all of the claims is requested. Applicant believes that claims 7-8, 10-13, 16 and 18-23 are now in condition for allowance and an indication of allowability and an early Notice of Allowance of all of the claims is respectfully requested.

If Examiner feels that a telephonic interview would be helpful, she is requested to call the undersigned at (203) 575-2629 prior to the issuance of the next office action.

Respectfully submitted,

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ANNOTATED SHEET SHOWING
CHANGES

1/24

Fig.1

